

AMENDMENTS TO THE CLAIMS

Claims 1-84 were filed originally.

Claims 23-32, 54, and 65-68 are canceled.

Claim 51 is amended.

Accordingly, claims 1-22, 33-53, 55-64, and 69-84 remain pending.

1. **(Original)** A method comprising:
receiving non-native words of a non-native language and at least one native
word of a native language that are entered by a user; and
converting the native word to a corresponding non-native word.

2. **(Original)** A method as recited in claim 1, wherein the non-native
language is English and the native language is Chinese.

3. **(Original)** A method as recited in claim 1, wherein the non-native
words are English words and the native word is Chinese Pinyin.

4. **(Original)** A method as recited in claim 1, wherein the native word
is written in phonetic text.

5. **(Original)** A method as recited in claim **Error! Reference source
not found.**1, further comprising displaying the non-native words and the native
word within a common entry line.

1 6. **(Original)** A method as recited in claim 1, wherein the converting
2 comprises determining a most probable non-native word given a context
3 established by the non-native words previously entered by the user.

4
5 7. **(Original)** A method as recited in claim 1, wherein the native word
6 is entered in phonetic form, the converting further comprising:

7 translating the native word from the phonetic form to a language form; and

8 translating the native word in the language form to the non-native word.

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10 8. **(Original)** A method as recited in claim 1, wherein the native word
11 is entered in phonetic form, the converting further comprising:

12 determining a most probable language form of the native word and
13 translating the native word from the phonetic form to the most probable language
14 form; and

15 determining a most probable non-native word given the most probable
16 language form of the native word.

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18 9. **(Original)** A method as recited in claim 1, wherein the native word
19 is entered in phonetic form and the converting comprises translating the native
20 word from the phonetic form to one or more native words in a language form, the
21 method further comprising displaying the one or more native words in the
22 language form.

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24 10. **(Original)** A method as recited in claim 9, further comprising:
25

1 displaying the non-native words and the phonetic form of the native word
2 within a common entry line; and

3 displaying the one or more native words in the language form within a pop-
4 up box adjacent the entry line.

5
6 11. **(Original)** A method as recited in claim 10, further comprising
7 ordering the native words within the pop-up box according to probabilities.

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9 12. **(Original)** A method as recited in claim 10, further comprising
10 enabling a user to scroll within the pop-up box.

11
12 13. **(Original)** A method as recited in claim 1, wherein the native word
13 is entered in phonetic form and the converting comprises:

14 translating the native word from the phonetic form to one or more native
15 words in a language form;

16 displaying the one or more native words in the language form;

17 translating at least one of the native words in the language form to one or
18 more non-native words; and

19 displaying the one or more non-native words.

20
21 14. **(Original)** A method as recited in claim 13, further comprising:

22 displaying the non-native words and the phonetic form of the native word
23 within a common entry line; and

24 displaying the one or more native words in the language form within a pop-
25 up box adjacent the entry line.

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2 15. **(Original)** A method as recited in claim 13, further comprising:
3 following translation to the one or more non-native words, displaying the
4 non-native words and the language form of the native word within a common
5 entry line; and
6 displaying the one or more non-native words within a pop-up box adjacent
7 the entry line.

8
9 16. **(Original)** A method as recited in claim 1, further comprising
10 displaying a bilingual sentence pair having a native sentence written in the native
11 language and including the native word and a corresponding non-native sentence
12 written in the non-native language and including the non-native word.

13
14 17. **(Original)** One or more computer-readable media having computer-
15 executable instructions that, when executed on a processor, direct a computer to
16 perform the method as recited in claim 1.

17
18 18. **(Original)** A method comprising:
19 displaying, via a user interface, character strings in a first language together
20 with at least one character string of a second language as the user enters the
21 character strings;
22 converting the character string of the second language to another character
23 string of the first language; and
24 replacing the character string of the second language with said other
25 character string of the first language in the user interface.

1
2 19. **(Original)** A method as recited in claim 18, wherein the first
3 language is English and the second language is Chinese.

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5 20. **(Original)** A method as recited in claim 18, further comprising
6 displaying the character strings of the first and second languages within a common
7 entry line.

8
9 21. **(Original)** A method as recited in claim 18, wherein the converting
10 comprises determining a most probable character string given a context
11 established by the character strings previously entered by the user.

12
13 22. **(Original)** One or more computer-readable media having computer-
14 executable instructions that, when executed on a processor, direct a computer to
15 perform the method as recited in claim 18.

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17 23. **(Canceled)**

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19 24. **(Canceled)**

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23 26. **(Canceled)**

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25 27. **(Canceled)**

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2 28. (Canceled)

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4 29. (Canceled)

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6 30. (Canceled)

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10 32. (Canceled)

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12 33. (Original) A method comprising:
13 receiving non-native words of a non-native language and at least one native
14 word of a native language, the native word being received in a first form of the
15 native language;
16 translating the native word from its first form to at least one native word of
17 a second form;
18 translating the native word of the second form to at least one non-native
19 word.
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21 34. (Original) A method as recited in claim 33, wherein the non-native
22 language is English and the native language is Chinese.
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1 35. **(Original)** A method as recited in claim 33, wherein the non-native
2 words are English words and the first form of the native word is Chinese Pinyin
3 and the second form of the native word is Chinese Mandarin.

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5 36. **(Original)** A method as recited in claim 33, wherein the translating
6 the native word from its first form comprises selecting a most likely native word
7 of the second form based on statistical probabilities.

8
9 37. **(Original)** A method as recited in claim 33, further comprising
10 accepting misspelled versions of the native word in the first form.

11
12 38. **(Original)** A method as recited in claim 33, further comprising
13 displaying the non-native words and the native word within a common entry line.

14
15 39. **(Original)** A method as recited in claim 33, wherein the translating
16 the native word from its second form to the non-native word comprises:

17 determining possible non-native word candidates from the second form of
18 the native word;

19 generating first probabilities associated with the non-native word
20 candidates that indicate how likely individual non-native word candidates were
21 intended by the user given the context established by previously entered non-
22 native words;

23 generating second probabilities associated with the non-native word
24 candidates that indicate how likely the second form of the native word was
25 intended given individual non-native word candidates; and

1 deriving a most probable non-native word from among the non-native word
2 candidates based on the first and second probabilities.

3
4 40. **(Original)** A method as recited in claim 33, further comprising
5 replacing the native word in its first form with the non-native word.

6
7 41. **(Original)** One or more computer-readable media having computer-
8 executable instructions that, when executed on a processor, direct a computer to
9 perform the method as recited in claim 33.

10
11 42. **(Original)** A method comprising:
12 enabling a user to enter non-native words of a non-native language and a
13 phonetic text string of a native language;
14 displaying the non-native words and the phonetic text string within a
15 common entry line;
16 translating the phonetic text string to at least one native word of the native
17 language;
18 determining possible non-native word candidates from the native word of
19 the native language;
20 generating first probabilities associated with the non-native word
21 candidates that indicate how likely individual non-native word candidates were
22 intended by the user given the context established by previously entered non-
23 native words;

1 generating second probabilities associated with the non-native word
2 candidates that indicate how likely the native word was intended given individual
3 non-native word candidates;

4 deriving a most probable non-native word from among the non-native word
5 candidates based on the first and second probabilities; and

6 translating the native word to the most probable non-native word.

7
8 43. **(Original)** A method as recited in claim 42, wherein the non-native
9 language is English and the native language is Chinese.

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11 44. **(Original)** A method as recited in claim 42, wherein the non-native
12 words are English words, the phonetic text is Chinese Pinyin, and the native word
13 is Chinese Hanzi.

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15 45. **(Original)** A method as recited in claim 42, wherein the translating
16 the phonetic string comprises selecting most likely native words based on
17 statistical probabilities.

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19 46. **(Original)** A method as recited in claim 42, wherein the determining
20 comprises using a bilingual dictionary to identify the non-native word candidates.

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22 47. **(Original)** A method as recited in claim 42, wherein the generating
23 first probabilities comprises using a statistical language model.

1 48. **(Original)** A method as recited in claim 42, wherein the generating
2 second probabilities comprises using a translation model.

3
4 49. **(Original)** A method as recited in claim 42, further comprising
5 displaying the most probable non-native word in place of the phonetic text string.

6
7 50. **(Original)** One or more computer-readable media having computer-
8 executable instructions that, when executed on a processor, direct a computer to
9 perform the method as recited in claim 42.

10
11 51. **(Currently Amended)** A cross-language input user interface
12 comprising:

13 a line-based entry area;
14 non-native text displayed within the line-based entry area; ~~and~~
15 native text displayed together with the non-native text within the line-based
16 entry area; and
17 converted non-native text, converted from the native text, substituted for
18 the native text within the line-based entry area.

19
20 52. **(Original)** A cross-language input user interface as recited in claim
21 51, wherein the non-native text comprises English and the native text comprises
22 Chinese.

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24 53. **(Original)** A cross-language input user interface as recited in claim
25 51, wherein the line-based entry area is oriented horizontally.

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2 54. (Canceled)

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4 55. (Original) A cross-language input user interface as recited in claim
5 51, further comprising a candidate list of non-native words that are possible
6 translations of the native text.

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8 56. (Original) A cross-language input user interface as recited in claim
9 51, further comprising a candidate list of non-native words that are possible
10 translations of the native text, the non-native words being ordered within the
11 candidate list according to a ranking.

12
13 57. (Original) A cross-language input user interface as recited in claim
14 51, wherein the line-based entry area is oriented in a first direction and further
15 comprising a candidate list of non-native words that are possible translations of the
16 native text, the candidate list being oriented in a second direction orthogonal to the
17 first direction.

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19 58. (Original) A cross-language input user interface as recited in claim
20 51, further comprising a sentence window, invokable by a user, to present
21 bilingual sentences that include the native text and the non-native text.

22
23 59. (Original) A word processor comprising the language input user
24 interface as recited in claim 51.
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1 60. **(Original)** A cross-language input user interface comprising:
2 an entry area that accepts first words written in a first language and at least
3 one second word written in a second language; and
4 a candidate list of first words that are possible translations from the second
5 word.

6
7 61. **(Original)** A cross-language input user interface as recited in claim
8 60, wherein the first language is English and the second language is Chinese.

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10 62. **(Original)** A cross-language input user interface as recited in claim
11 60, wherein the entry area comprises a line-based entry area oriented in a first
12 direction and the candidate list is presented adjacent the line-based entry area and
13 oriented in a second direction orthogonal to the first direction.

14
15 63. **(Original)** A cross-language input user interface as recited in claim
16 60, further comprising a sentence window, invokable by a user, to present
17 bilingual sentences written in the first and second languages.

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19 64. **(Original)** A word processor comprising the language input user
20 interface as recited in claim 60.

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22 65. **(Canceled)**

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24 66. **(Canceled)**
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1 67. **(Canceled)**

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3 68. **(Canceled)**

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5 69. **(Original)** A cross-language writing architecture comprising:
6 a user interface to enable a user, who is accustomed to a native language, to
7 enter non-native words from a non-native language; and
8 a spelling tool to assist the user with correct entry of the non-native words.

9
10 70. **(Original)** A cross-language writing architecture as recited in claim
11 69, wherein the user interface allows the user to enter a native word from the
12 native language instead of the non-native word, the spelling tool comprising a
13 translator to translate the native word to a corresponding non-native word.

14
15 71. **(Original)** A cross-language writing architecture as recited in claim
16 70, wherein the translator utilizes a bilingual dictionary.

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18 72. **(Original)** A cross-language writing architecture as recited in claim
19 70, wherein the translator utilizes a statistical language model.

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21 73. **(Original)** A cross-language writing architecture as recited in claim
22 70, wherein the translator utilizes a bilingual translation model.

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24 74. **(Original)** A cross-language writing architecture as recited in claim
25 69, wherein the spelling tool utilizes a thesaurus.

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2 75. **(Original)** A word processor comprising the language input
3 architecture as recited in claim 69.

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5 76. **(Original)** A cross-language writing architecture comprising:
6 a user interface to enable a user, who is accustomed to a native language, to
7 enter non-native words from a non-native language; and
8 a sentence recommendation tool to suggest possible sentence structures in
9 the non-native language.

10
11 77. **(Original)** A cross-language writing architecture as recited in claim
12 76, wherein the sentence recommendation tool comprises:

13 a bilingual corpus containing bilingual sentence pairs, written in both the
14 native language and the non-native language; and

15 a sentence retrieval unit to retrieve bilingual sentence pairs from the
16 bilingual corpus.

17
18 78. **(Original)** A cross-language writing architecture as recited in claim
19 77, wherein the sentence recommendation tool ranks the sentences retrieved from
20 the bilingual corpus.

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22 79. **(Original)** A word processor comprising the language input
23 architecture as recited in claim 76.

24
25 80. **(Original)** A cross-language writing architecture comprising:

1 a user interface to enable entry of English words together with Chinese
2 Pinyin;

3 a spelling tool to translate the Chinese Pinyin to one or more Chinese
4 words, the spelling tool being further configured to translate the Chinese words to
5 one or more English words that may be substituted for the Chinese Pinyin; and

6 a sentence recommendation tool, invokable by a user, to offer pairs of
7 corresponding sentences written in English and Chinese to demonstrate how an
8 English word is used in a sentence.

9
10 81. **(Original)** A cross-language writing architecture as recited in claim
11 80, wherein the spelling tool comprises:

12 a Chinese-English dictionary to determine possible English word
13 candidates from the Chinese words;

14 an English language model to determine how likely the user intended the
15 English word candidates given previously entered English words; and

16 an English-Chinese translation model to determine how likely individual
17 Chinese words were intended given the English word candidates.

18
19 82. **(Original)** A cross-language writing architecture as recited in claim
20 80, wherein the sentence recommendation tool comprises:

21 a bilingual corpus containing bilingual sentence pairs written in both
22 English and Chinese; and

23 a sentence retrieval unit to retrieve bilingual sentence pairs from the
24 bilingual corpus.

1 83. **(Original)** A word processor comprising the language input
2 architecture as recited in claim 80.

3
4 84. **(Original)** One or more computer-readable media having computer-
5 executable instructions that, when executed on a processor, direct a computer to:

6 enable entry of English words and Chinese Pinyin;

7 translate the Chinese Pinyin to at least one Chinese word;

8 determine possible English word candidates from the Chinese word;

9 generate first probabilities associated with the English word candidates that
10 indicate how likely each of the English word candidates was intended given
11 previously entered English words;

12 generate second probabilities associated with the English word candidates
13 that indicate how likely the Chinese word was intended given each of the English
14 word candidates;

15 derive a most probable English word from among the English word
16 candidates based on the first and second probabilities; and

17 translate the Chinese word to the most probable English word.
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